

REMARKS

Claims 1, 3-5, 10-11, 13, 15-21, and 30-42 were rejected as anticipated by SUZUKI et al. 6,031,957. Reconsideration and withdrawal of the rejection of claims 1, 3-5, 10-11, 13, 15-21, and 30-42 are respectfully requested.

Claim 1 has been amended to include the subject matter of claim 2. Accordingly, claims 1, 3-5, 10-11, and 32 avoid the rejection under §102.

Claim 13 provides, among other features, that the bridge section clad layer is apart from the substrate and the clad layer in a portion corresponding to the heater, and that a supporting section is provided in a part of a space between the bridge section optical waveguide and the substrate in an extending direction of the core layer to support the bridge section clad layer. The supporting section is shown, for example, as element 2a in Figures 3B, 6B, 9B, 12B, 13C, and 15C.

The Official Action points to sacrificial layer 8 in Figure 2 of SUZUKI et al. as corresponding to the claimed supporting section. However, the sacrificial layer 8 is not present when the bridge section clad layer is apart from the substrate and the clad layer, as set forth in the claim. That is, in the interim step of Figure 2(f) the sacrificial layer 8 is present, but the bridge section clad layer is not yet separated from the substrate. In Figure 2(g), when the bridge section clad layer has been separated from the substrate, the sacrificial

layer is not present. Thus, the sacrificial layer 8 does not correspond to the claimed supporting section and claims 13, 15, and 17-21 avoid the rejection under §102.

Claims 16 and 30 also include a supporting section and are allowable for the same reason as claim 13. Accordingly, claims 16, 30, and 33-42 avoid the rejection under §102.

Claim 31 has been amended into independent form by adding the subject matter of previously pending claim 1 thereto and has been amended to clarify that the bridge section clad layer has the wider ends, such as shown in Figure 13A for example. SUZUKI et al. disclose that the bridge section has a constant width (Figure 1), and thus the reference does not disclose or suggest that the bridge be wider at the ends than in the center, as is now claimed in claim 31. Accordingly, claim 31 avoids the rejection under §102.

Claims 2, 12, 14, 22-24, 26, 29, and 43-44 were rejected as unpatentable over SUZUKI et al. Claims 26 and 44 have been canceled and reconsideration and withdrawal of the rejection of claims 2, 12, 14, 22-24, 29 and 43 are respectfully requested.

There is not suggestion in SUZUKI et al. to provide the glass sacrifice and clad layers as defined in amended claim 1 (now including the subject matter of claim 2). SUZUKI et al. use silicon in the sacrifice layer, not the glass claimed herein.

Claim 22 is a method that includes the step of removing the sacrifice layer to leave a portion for supporting the lower clad layer. The Official Action states that one of skill in the art would be motivated to leave a portion of the sacrifice layer to save time. However, SUZUKI et al. explicitly state that the "gap 5 extends over the total length in the longitudinal direction of the glass wave guide element" (column 3, lines 32-34) and that "all of the silicon terrace 8 is removed over the total length in the longitudinal direction of the glass wave guide element by etching" (column 4, lines 29-31) and that the "core and a central portion ... are formed in a state of being continuously separated along the longitudinal direction of the core from the substrate through a gap" (column 1, lines 54-56). These are explicit statements how the device in SUZUKI et al. is to be made; it is not believed that one of skill in the art would be motivated to ignore these directions simply to save time. Further, there is no indication in the reference that the device in SUZUKI et al. would work if a portion of the sacrifice layer were left to support the lower clad layer as claimed herein. The statements cited above make it clear to the artisan that nothing should be left of the sacrifice layer, indicating to the artisan that operability could be a problem unless all the sacrifice layer were removed. Accordingly, claims 22 and 29 avoid the rejection under §103.

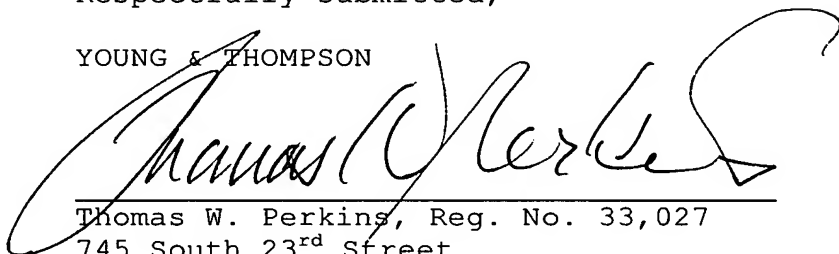
Claim 23 corresponds to amended claim 1 and is allowable for the same reason as amended claim 1. Accordingly, claims 23-24 and 43 avoid the rejection under §103.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON

A large, stylized handwritten signature in black ink, appearing to read 'Thomas W. Perkins', is written over a horizontal line.

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